

WHAT IS CLAIMED IS:

1. Particulate titanium oxide comprising a mixed crystal titanium oxide containing rutile crystal produced by a vapor phase process, wherein the titanium oxide has a property represented by the following general formula (1)

$$R \geq 1,300 \times B^{-0.95} \quad (1)$$

wherein R represents a rutile content (%) measured by an X-ray diffraction method and B represents a BET specific surface area ( $\text{m}^2/\text{g}$ ), which ranges from about 15 to about 200  $\text{m}^2/\text{g}$ .

2. The particulate titanium oxide as claimed in claim 1, wherein the BET specific surface area represented by B is about 40 to about 200  $\text{m}^2/\text{g}$ .

3. The particulate titanium oxide as claimed in claim 1, wherein the titanium oxide has a 90% cumulative weight particle size distribution diameter D90 measured by a laser diffraction-type particle size distribution measuring method of about 2.5  $\mu\text{m}$  or less.

4. The particulate titanium oxide as claimed in claim 1, wherein the titanium oxide has a distribution constant n according to Rosin-Rammler formula is about 1.5 or more.

5. A production process for producing particulate titanium oxide, comprising subjecting a titanium tetrachloride diluted gas obtained by diluting titanium tetrachloride to from about 10 % by volume or more to about 90 % by volume or less with an inert gas to high temperature oxidation with an oxidizing gas containing

oxygen or steam, or both, wherein the titanium tetrachloride diluted gas and the oxidizing gas, each preheated to about 900°C or more, are supplied into reaction tube at a flow rate of about 20 m/sec or more and  
5 allowed to react for a time of residence at high temperatures above about 700°C of about 3 seconds or less.

6. The production process as claimed in claim 5, wherein use is made of a titanium tetrachloride diluted gas  
10 obtained by diluting titanium tetrachloride to about 20% by volume or more and about 80% by volume or less with an inert gas.

7. The production process as claimed in claim 5, wherein  
15 the temperatures for preheating the titanium tetrachloride and the oxidizing gas are each about 1,000°C or more.

8. The production process as claimed in claim 5, wherein the titanium tetrachloride diluted gas and oxidizing gas  
20 are supplied to the reaction tube through a coaxial parallel flow nozzle having an inner tube, the inner tube having an inner diameter of about 50 mm or less.

9. Particulate titanium oxide produced by the production  
25 method as claimed in claim 5.

10. A titanium oxide composition comprising particulate titanium oxide as claimed in claim 1.

30 11. A titanium oxide composition comprising particulate titanium oxide as claimed in claim 9.